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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,209	05/18/2001	Kozo Nakamura	82822	6736

7590 02/20/2004

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EXAMINER

SONG, MATTHEW J

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 02/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

09/856,209

Applicant(s)

NAKAMURA ET AL. 

Examiner

Matthew J Song

Art Unit

1765

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 20 January 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
 - (b) ☐ they raise the issue of new matter (see Note below);
 - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see continuation sheet.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____

Claim(s) objected to: _____

Claim(s) rejected: 9.

Claim(s) withdrawn from consideration: _____

8. ☐ The drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
10. ☐ Other: _____

NADINE G. NORTON
SUPERVISORY PATENT EXAMINER



Response to Arguments

Applicant's arguments filed 1/20/2004 have been fully considered but they are not persuasive.

Applicant's argument that Iida et al does not teach the limitations of claim 9 is noted but is not found persuasive. Applicants allege that ratio of temperature gradients for Fig 10A is 1.07, which is out of the range claimed by applicant. The Iida reference teaches a particular example using $G_e=45.0$ ($^{\circ}\text{C}/\text{cm}$) and $G_c=42.0$ ($^{\circ}\text{C}/\text{cm}$), which is a ratio of 1.07 and a OSF ring **42** greater than 0.5. The Iida reference also teaches a $G_c=35^{\circ}\text{C}/\text{cm}$ and a $G_e=40^{\circ}\text{C}/\text{cm}$, which is a ratio of 1.16, which is within the ratio instantly claimed by applicant. The Iida reference is not limited to Example 1 and Figure 10, which utilizes a $G_e=45.0^{\circ}\text{C}/\text{cm}$ and a $G_c=42.0^{\circ}\text{C}/\text{cm}$ (col 14, ln 15-20), as alleged by applicant. Figure 10 is merely provided to show the general trends for a particular set of temperature gradients within the parameters disclosed by Iida et al, namely a ΔG not higher than $5^{\circ}\text{C}/\text{cm}$, note entire reference. Iida et al teaches a method of determining the pulling rate to from an N region when the ΔG is held at a desired level by pulling at a relatively high rate, thereby growing a V-rich crystal, subsequently the growth rate is gradually decreased to a level at which an I-rich crystal is grown and the thus obtained crystal is cut to check for crystal defects (col 11, ln 30-50), which is exemplified in Example 1 and Figure 10A. The method of using a ΔG less than $5^{\circ}\text{C}/\text{cm}$ disclosed by Iida et al, specifically a $G_e=35^{\circ}\text{C}/\text{cm}$ and a $G_c=30^{\circ}\text{C}/\text{cm}$ in Fig 8 and a $G_e=40^{\circ}\text{C}/\text{cm}$ and a $G_c=35^{\circ}\text{C}/\text{cm}$ (col 10, ln 35-40) also requires a high pulling speed which is gradually decreased to determine a desired pulling speed, as in Fig 10A, which inherently produces a similar OSF ring, as applicant.

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In response to applicant's argument that Iida et al does not teaches controlling the $G_{1_{edge}}/G_{1_{center}}$ and $G_{1_{center}} \times G_{e_{center}}$, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Iida et al discloses controlling the temperature gradients at the edge and center, as applicant. Iida et al is silent to the parameters claimed, however conditions claimed are inherent to Iida et al, as discussed previously.

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